CA920020063US1
Paternostro, L. et al
Tracking Unit Tests of Computer Software
Applications
1/14

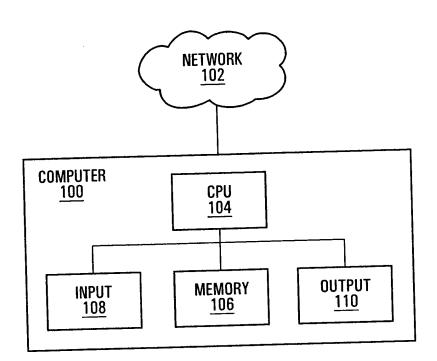


FIG. 1

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Paternostro, L. et al
Tracking Unit Tests of Computer Software
Applications
2/14

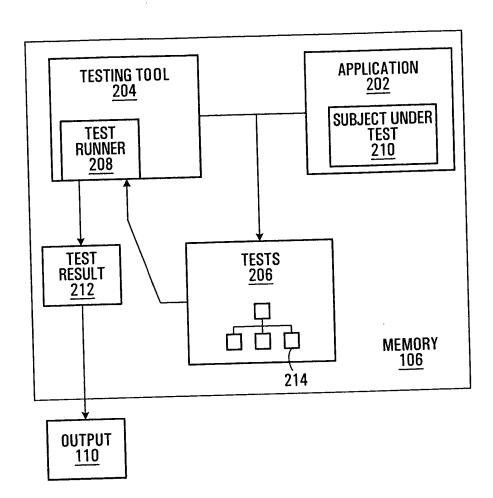


FIG. 2

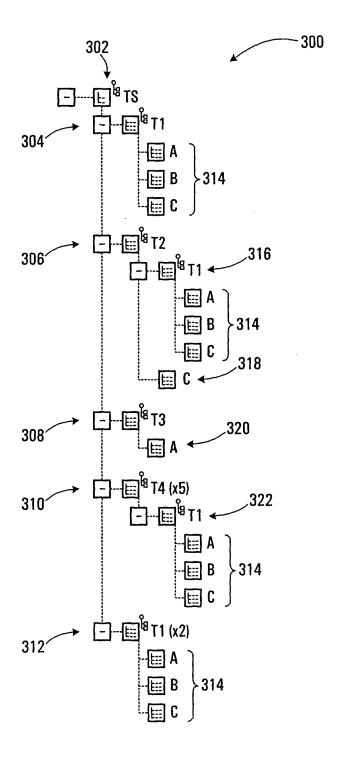
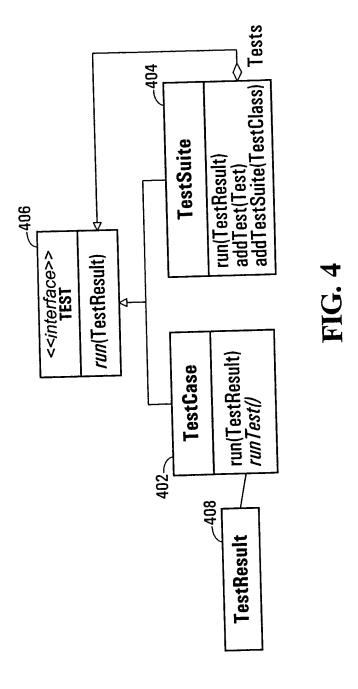


FIG. 3

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Patrernostro, L. et al.
Tracking Unit Tests of Computer Software
Applications
4/14



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CA920020063US1
Paternostro, L. et al.
Tracking Unit Tests of Computer Software
Applications
5/14

junit.extensions.TestDecorator.basicRun(TestDecorator.java:22)
junit.extensions.TestDecorator.run(TestDecorator.java:28)
junit.extensions.RepeatedTest.run(RepeatedTest.java:25) at tests2.TS.main(TS.java:52) C(tests2.T1) junit.framework.AssertionFailedError: Error introduced B(tests2.T1)|junit.framework.AssertionFailedError: Error introduced junit.extensions.TestDecorator.basicRun(TestDecorator.java:22)
junit.extensions.TestDecorator.run(TestDecorator.java:28) junit.extensions.RepeatedTest.run(RepeatedTest.java:25) <u>specific context</u> of the test C a specific context of the test B Errors tests2.TS.main(TS.java:52) tests2.T1.C(T1.java:70) tests2.T1.B(T1.java:59) Failures: failures: Tests run: 29, FAILURES!!! There were at at at at rime: 504 5

FIG. 5

CA920020063US1
Paternostro, L. et al.
Tracking Unit Tests of Computer Software
Applications
6/14

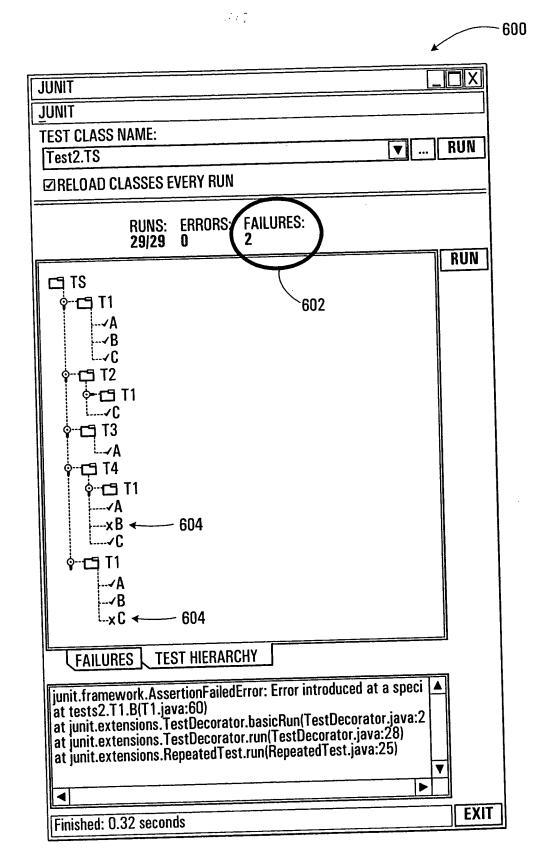


FIG. 6

CA920020063US1
Paternostro, L. et al.
Tracking Unit Tests of Computer Software
Applications
7/14

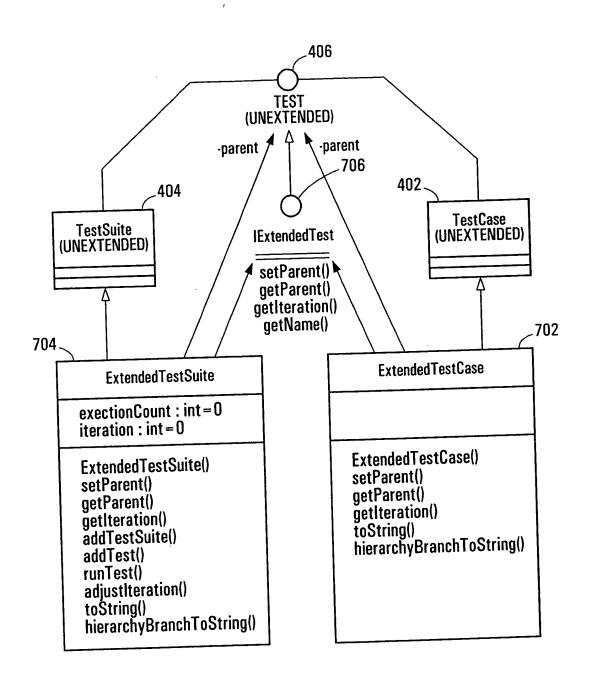


FIG. 7

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CA920020063US1
Paternostro, L. et al.
Tracking Unit Tests of Computer Software
Applications
8/14

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```
package junit;
  import junit.framework.Test;
  interface IExtendedTest
5
  extends Test
6
7
      public void setParent(Test parent); ← 802
8
9
                                         804
      public Test getParent();
10
11
                                         806
       public int getIteration();
12
13
                                         808
       public String getName();
14
15
                                         810
       public String toJUnitString();
16
17 }
```

FIG. 8

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CA920020063USI Paternostro, L. et al.

Tracking Unit Tests of Computer Software Applications

9/14

```
900
   package junit;
1
2
    import junit.extensions.TestDecorator;
3
    import junit.framework.Test;
4
    import junit.framework.TestResult;
import junit.framework.TestSuite;
5
6
7
    class ExtendedTestSuite
8
    extends TestSuite implements IExtendedTest
9
10
         private Test parent;
11
12
         private int iteration = 0;
13
         private int executionCount = 0;
14
          private int previousParentIteration = 0;
15
16
          public void setParent(Test parent)
                                                    902
17
18
               this.parent = parent;
19
20
 21
          public Test getParent()
 22
 23
                return parent;
 24
 25
 26
          public int getIteration()
 27
 28
                return iteration;
 29
 30
          public void addTestSuite(Class testClass)
 31
 32
                addTest(new ExtendedTestSuite(testClass));
 33
 34
 35
 36
           public void addTest(Test test)
  37
  38
                super.addTest(test);
  39
                 if (test instanceof TestDecorator)
  40
                      test = ((TestDecorator) test).getTest();
  41
                                                                    >910
  42
                 if (test instanceof IExtendedTest)
  43
  44
                      IExtendedTest extendedTest =
  45
  46
       (IExtendedTest) test;
                      extendedTest.setParent(this);
  47
  48
  49
            public void runTest(Test test, TestResult result)
  50
  51
                                                                   912
  52
                 adjustIteration();
   53
                 super.runTest(test, result);
   54
            }
   55
   56
                               FIG. 9A
   57
```

```
protected void adjustIteration()
58
59
              if((parent != null) && (parent instanceof
60
    IExtendedTest))
61
                   int parentIteration =
62
    ((IExtendedTest)parent).getIteration();
                   if(parentIteration != previousParentIteration)
63
64
                        executionCount = 0;
                                                                914
65
                        previousParentIteration =
66
    parentIteration;
67
68
69
              executionCount++;
70
              iteration = ((int) (executionCount /
71
    this.testCount())) + 1;
               if((executionCount % this.testCount()) == 0)
72
                    iteration--;
73
          }
74
 75
          public String toJUnitString()
 76
 77
               return super.toString();
 78
 79
 80
          public String toString()
 81
               return hierarchyBranchToString(this);
 82
 83
 84
          protected String hierarchyBranchToString(Test test)
 85
 86
               if ((test != null) && (test instanceof
 87
 88
     IExtendedTest))
 89
                    IExtendedTest extendedProvider =
 90
      (IExtendedTest) test;
                    String hierarchy =
     hierarchyBranchToString(extendedProvider.getParent());
 91
                    if(hierarchy.length() > 0)
 92
                         hierarchy = hierarchy + ">";
 93
                                                                 920
  94
                    hierarchy = hierarchy +
  95
      extendedProvider.getName();
                    if(extendedProvider.getIteration() > 0)
                          hierarchy = hierarchy + "_" +
  96
  97
      extendedProvider.getIteration();
  98
                    return hierarchy;
  99
  100
  101
                if(test != null)
  102
                    return "?>" + test.toString();
  103
                return "";
  104
                                                       FIG. 9B
           }
  105
  106 }
```

```
Applications
                               11/14
                                                          -1000
1 package junit;
   import junit.framework.Test;
   import junit.framework.TestCase;
   class ExtendedTestCase
   extends TestCase implements IExtendedTest
        private Test parent;
9
10
        /**
11
         * Constructor for JUnitTestCase.
12
         * @param name
13
         */
14
        public ExtendedTestCase(String name)
15
16
             super(name);
17
18
19
         public void setParent(Test parent)
 20
 21
              this.parent = parent;
 22
 23
 24
         public Test getParent()
 25
 26
              return parent;
 27
 28
 29
         public int getIteration()
 30
 31
              if((parent != null) && (parent instanceof
 32
    ExtendedTestSuite))
                   return ((ExtendedTestSuite)
                                                             1006
 33
    parent).getIteration();
 34
              return -1;
 35
          }
 36
 37
         public String toJUnitString()
  38
  39
               return super.toString();
  40
  41
  42
          public String toString()
  43
  44
               return hierarchyBranchToString(this);
  45
  46
          protected String hierarchyBranchToString(Test test)
  47
  48
  49
```

CA920020063US1
Paternostro, L. et al.
Tracking Unit Tests of Computer Software

FIG. 10A

```
+ extendedProvider.getIteration();
                        test;
                                                                                              hierarchy = hierarchy + extendedProvider.getName();
if(extendedProvider.getIteration() > 0)
    hierarchy = hierarchy + "_" + extendedProvide
&& (test instanceof IExtendedTest))
                        = (IExtendedTest)
                                 String hierarchy = hierarchyBranchToString(extendedProvider.getParent());
                                                          if(hierarchy.length() > 0)
    hierarchy = hierarchy + ">";
                        IExtendedTest extendedProvider
                                                                                                                                                                                            test.toString();
                                                                                                                                             hierarchy;
((test != null)
                                                                                                                                                                                           return "?>" +
                                                                                                                                                                                if(test != null)
                                                                                                                                                return
                                                                                                                                                                                                                    return "";
5
2
2
3
3
3
3
3
```

TG. 10E

118

extended. ExtendedTestSuite.runTest (ExtendedTestSuite.java:114) extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114) extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114) extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114 junit.extensions.TestDecorator.basicRun(TestDecorator.java:22 extended. ExtendedTestSuite.runTest(ExtendedTestSuite.java:114 junit.extensions.TestDecorator.basicRun(TestDecorator.java:22 1>T1 2>C 2)unit.framework.AssertionFailedError: Error introduced a specific context of the test C unit.extensions.TestDecorator.run(TestDecorator.java:28) unit.extensions.TestDecorator.run(TestDecorator.java:28) Error iunit.extensions.RepeatedTest.run(RepeatedTest.java:25) junit.extensions.RepeatedTest.run(RepeatedTest.java:25) TS 1>T4 5>T1 5>B 5 unit.framework.AssertionFailedError: introduced at a specific context of the test B extendedTests2.TS.main(TS.java:54) at extendedTests2.T1.B(T1.java:61) extendedTests2.T1.C(T1.java:72) 2 failures: were There Time:

FAILURES!!! Tests run: 29, Failures: 2, Errors:

extendedTests2.TS.main(TS.java:54)

FIG. 1

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Paternostro, L. et al.

Tracking Unit Tests of Computer Software

Applications

14/14

		1200
	JUNIT	
	JUNIT	
ľ	TEST CLASS NAME:	RUN
	extendedTests2.TS	11014
	☑ RELOAD CLASSES EVERY RUN	
	RUNS: ERRORS: FAILURES: 29/29 0 2	
	TS 1>T4 5>T1 5>B 5: Experimental at a specific context of t	RUN
	TS $1 > T1_2 > C_2$: Error introduced at a specific context of the test C	1
	1202	
	- TEOT HIEDADONY	
	FAILURES TEST HIERARCHY	
	E in the format introduced at a specific cente	
	junit.framework.AssertionFailedError: Error introduced at a specific conte	
	at extended restSuite.runTest(ExtendedTestSuite.java:114)	,
	at extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java.114)	
	at junit extensions. Test Decorator run (Test Decorator java: 28)	
	junit.framework.AssertionFailedError: Error introduced at a specific conte at extendedTests2.T1.B(T1.java:61) at extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114) at extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114) at junit.extensions.TestDecorator.basicRun(TestDecorator.java:22) at junit.extensions.TestDecorator.run(TestDecorator.java:28) at junit.extensions.RepeatedTest.run(RepeatedTest.java:25) at extended.ExtendedTestSuite.runTest(ExtendedTestSuite.java:114)	
	at extended.Extended restoures.ext	
	 	
	Finished: 0.331 seconds	EXIT

FIG. 12